Media Converter

MC102F/XX

User Manual

ML46179 Rev. 02

Standards Compliance

UL 1950; CSA 22.2 No 950; FCC Part 15 Class A; CE-89/336/EEC, 73/23/EEC

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Chapter 1

Introduction to the 102F/XX Media Converter

Introduction

The MC102 product line is a two-port switch used to adapt different Ethernet interfaces in a multitude of ways. Different adaptations include copper-to-fiber and fiber-to-fiber with a choice of multimode fiber, single mode fiber, single fiber operation, different wavelengths and power levels. The copper port has the auto-negotiation feature and is a 10/100BaseTX. Using switching technology, the 102F/XX Media Converter provides important advantages over other simple repeaters or converters. The most important distinction is the separation of collision domains and error packets filtering between the two ports.

Application

Replacing network backbones with fiber and upgrading cable segments in order to deliver more bandwidth to the desktop creates a steady increase of mixed media environments. As a result, copper and fiber cabling must coexist as homogeneous elements of the network. Media converters can seamlessly connect copper and fiber cabling and enable network managers to expand the network. Economics usually dictate that these circuits are multimode. If applications need to be extended to other buildings or cities a single mode fiber is utilized. Moreover, dark fibers contracted from public carriers are usually single mode. media converters have the options of multimode and single mode fiber conversion, as well as, conversion between multimode and single mode fibers.

Over the last few years, local area network traffic has exploded. Network managers today are facing a barrage of users who are demanding increasing more bandwidth. Applications such as videoconferencing, multimedia presentations and electronic imaging have become more and more popular, causing existing infrastructures to collapse under the heavy demand. In many cases IT managers seek efficient ways to utilize existing fibers. One method is to use single fiber for full-duplex transmission. For this specific application most of our converters have an option for single fiber operation (on single mode fiber).
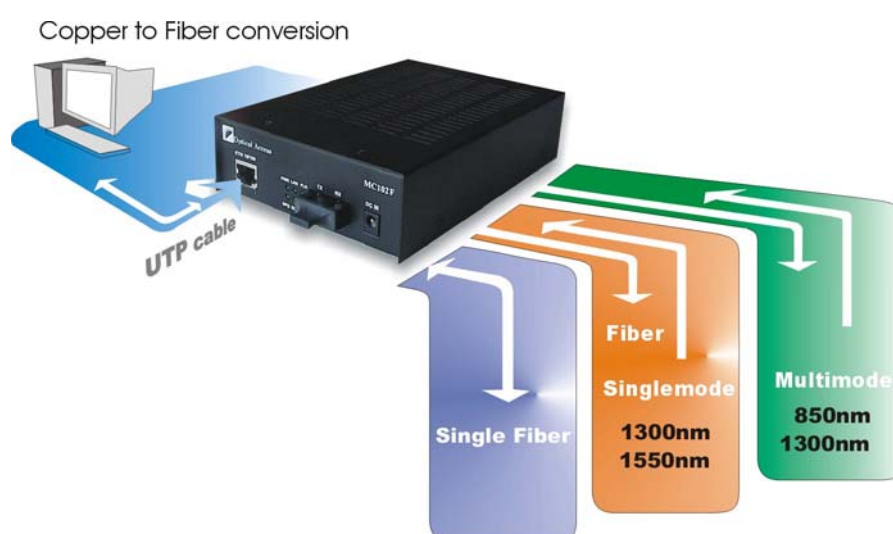

Figure 1 Copper to Single Fiber, Singlemode fiber or Multimode fiber Conversion

Front Panel

The table below describes the front panel, the various components , LED indications and their functions.

Description	Function
ETH 10/100	Copper input connection
TX RX	Fiber optic link
DC IN	DC cable connection. The voltage polarities of the port are:

Global LEDS

Name	Color/Type of Light	Function
PWR	Green	Power LED - **ON** = power up **OFF** = power down
LNK	Green	**On:** Established connection
FLK	Green	**On:** Established connection to fiber optic link
SPD	Green	**On:** 100 Mbps connection
ACT	Green	Network signal activity (Tx or Rx)
FRX	Green	Receive a signal from the fiber optic port.

Technical Specifications

Parameters	MC102F/XX Requirements
Input Voltage (V)	DC: 6.5 ± 7.5 1 Amps*
Maximum Power Consumption (W)	12W
Size: Width x Depth x Height	180x120x640 mm 17.4 x 16.15 x 24 inches
Weight	.362 kg / 0.798 lbs.
Operating Temperature	0 °C to 50°C / 32°F to 122°F
Storage Temperature	-40 °C to +70°C/-58°F to 158°F
Humidity	85% maximum, non-condensing
Standards Compliance	UL 1950; CSA 22.2 No 950; FCC Part 15 Class A; CE-89/336/EEC, 73/23/EEC

* The external power supply is included with the 102F/XX Media Converter.
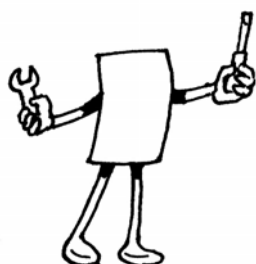
Chapter 2

Installation

The following describes the MC102F/XX media converter, its installation and configuration procedures as follows:

1. Connect the enclosed power supply to the DC IN input connector.

2. Connect the power supply to the line source.

    100 – 240 VAC 50 – 60 Hz

3. Verify the LED PWR is activated.

4. Verify that the opposite side is configured to the factory default, FORCE 100 Mb/s for the fiber optic link.

    > **NOTE:**
    > There is an option to set the MC102F to auto negotiation by selecting internal slide switch.

5. Connect Ethernet copper RJ-45 cable to ETH 10/100.

    > **NOTE:**
    > Use a straight cable for host connection or crossed cable for switch or hub connection.

6. Verify the LED LINK is active.

7. Connect fiber optic cable with a suitable connector, SC Duplex or SC Simplex or MT-RJ, to the optical F/O connector.

8. Verify the LED FLK is active.

9.   Verify connectivity by sending traffic (Ping).

10.   Verify the LED's SPD, ACT and FRX are active.

NOTE:
In event of any malfunction use the RESET feature. Use a small sharp object to press the button within the hole in the top- front of the device.

Figure 2 MC102F/XX

Slide Switch Configuration

The slide switch chip provides the MC102 converter with more flexibility and switching options. In order to set the switch to the desired setting the user must open unit's cover and adjust the slide switches manually.
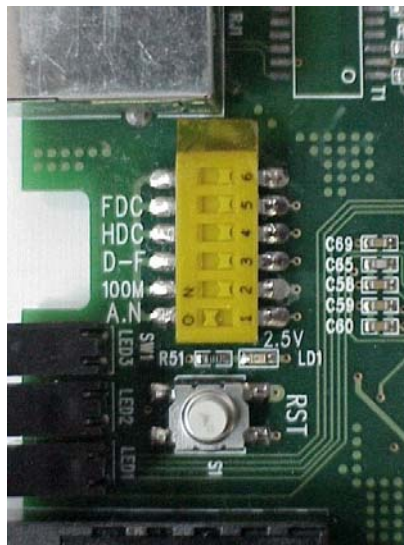

Figure 3 Slide Switch

Setting the Switches Manually

1. Unscrew the MC102F/XX top cover.

2. Remove the protective covering from the switching unit.

3. Use a small sharp object to set the switch to the desired setting.

4. Reinstall the converter's protective covering and connect the converter as described in this chapter.

The table below describes the switch position and which feature is enabled.

Label	Description	Feature Enabled
NC	Not Connected	The switch is not connected.
FDC	Full Duplex Flow Control	OFF – Disable flow control (default).
		ON – Enable IEEE802.3x Paused based flow control.
HDC	Half Duplex Flow Control Disable	OFF – Disable flow control (default).
		ON – Enable "forced collision" flow control.
D - F	Duplex Mode	When A.N is ON Auto-Negotiation is disabled.
		OFF – Set to full Duplex(default).
		ON – Set to half Duplex.
100M	Speed Setting	When A.N is ON (Auto-Negotiation is disabled).
		OFF – Set to 100 Mbps (default).
		ON – Set to 10 Mbps.
A.N.	Auto-Negotiation enable	OFF – Set to Auto-Negotiation.
		ON – The port speed is set by 100M (default).
		The duplex is set by D-F

> **NOTE:**
> As the default the slide switch is configured to forced 100 Mbps.

Contact Information

If you have any questions or encounter any difficulties with this device contact your local Optical Access representative or your Customer Service Representative.

Contact

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